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AUTHOR Glover, Jeanette W.
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ABSTRACT

Student effort, the campus environment, and student age and full- or part-time status have significant effects on outcomes for university students. This study employed the same three sets of independent variables to predict gains in general education and in personal and social development for community college students. The study analyzed data from the Community College Student Experiences Questionnaire completed by 4,210 students from nine geographically diverse community colleges. For both educational and personal/social outcomes, quality and quantity of student effort and positive perception of the campus environment were significant predictors regardless of the student's age. Environment interacting with full- or part-time status was also a significant predictor of gains in general education. More than half the sample reported working from 10 to 20 hours weekly and another 26 percent worked at least 30 hours per week. Approximately 75 percent estimated spending 20 hours or less per week studying and preparing for classes. Students who were more involved and those who rated their campus environment positively reported making more progress in personal and social development as well as in general education than less involved and less satisfied students. (Contains 24 references.)
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Running head: OUTCOMES OF THE COMMUNITY COLLEGE EXPERIENCE

ED 402 831

Campus Environment and Student Involvement as Predictors of Outcomes of the Community College Experience

Jeanette W. Glover

The University of Memphis

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Abstract

Student effort, the campus environment, and student age and full- or part-time status have significant effects on outcomes for university students. This paper employs the same three sets of independent variables to predict gains in general education and in personal and social development for community college students. Using data from the Community College Student Experiences Questionnaire for 4210 students, standard multiple regression was run twice, once for each outcome variable, with R^2 ranging from .329 to .446. For both outcomes, quality and quantity of student effort and positive perception of the campus environment were significant predictors regardless of students' age. Environment interacting with full- or part-time status was also a significant predictor of gains in general education.

Campus Environment and Student Involvement as Predictors of Outcomes of the Community College Experience

Enrollment in American community colleges in the South tripled in the two decades prior to 1990 and doubled during the same period in the Southwest and West (Phillipe, 1995). Half of the nearly two and a half million first-time college freshmen in 1992 matriculated at community colleges (Phillipe, 1995). Community college students are typically older than traditional students; their average age is 29, and one-third are over 30 years of age (Phillipe, 1995). As a rule, community college students commute to classes part-time and invest heavily in work and family responsibilities (Phillipe, 1995; Rendon, 1995). Nearly half of Fall 1994 freshmen surveyed from public two year colleges voiced some concern about financing their educations, and more than 38% expected to get a job to pay for their college expenses (Astin, Korn, Sax & Mahoney, 1995). In addition, Kinnick and Kempner (1988) noted that community college students, compared to their counterparts in four year colleges and universities, come from lower socioeconomic backgrounds, participate in fewer college preparatory courses in high school, and exhibit lower aspirations for the baccalaureate.

In spite of these apparent obstacles to completing higher education, evidence from interviews with community college students reveals that they have high aspirations (Jalomo (1995; Rendon, 1993a), self-initiative, and resilience (Jalomo, 1995).

Eaton (1988) asserted that the functions of today's community colleges include the three C's: collegiate, to prepare students to transfer to universities; compensatory, to bolster basic skills of underprepared students; and community-based, to offer continuing education services. It is not surprising, then, that among the reasons students report for attending a community college range from preparing for transfer to a four-year college to satisfying personal goals (Friedlander, Lehman & Pace, 1990). Over 80% of the respondents to the survey by Astin et al. (1995) gave preparing to get a better job as one of their reasons for attending school, and half listed gaining skills in general education as a motivating factor for attending college.

With such a variety of student backgrounds and goals, evaluation of the outcomes of the community college experience must be multifaceted. The rate at which community college students transfer to a four year institution to attain a degree has become a predominant indicator of institutional success for community colleges in spite of their diverse clientele. Richardson (1988) has urged community college administrators to strengthen the quality and effectiveness of the learning environment to revitalize the transfer function of community colleges. Grade point averages, long the benchmark for gauging the success of schooling, tap only a narrow band of the learning spectrum. Cousineau and Landon (1989) suggested evaluating three other academic outcomes in addition to transfer rates: students' employability, skill gains, and satisfaction with their academic studies.

Other approaches to assessing the quality and effectiveness of the community college experience borrow constructs from impact models (Pascarella & Terenzini, 1991) developed to explain outcomes for undergraduate students at the university level. Tinto's (1975) academic and social integration constructs, Astin's (1984) theory of student involvement, and Pace's (1984) concepts of quality and quantity of effort, all place students as active participants in their learning experiences. Pace (1984), for example, coined his quality and quantity of student effort terminology to describe his thesis that what students learn in college depends to a considerable degree upon how actively they engage in the experiences and opportunities offered to them by the college. Active involvement in the learning process (Astin, 1984, 1993; Pascarella & Terenzini, 1990; Rendon, 1993b), along with the perception of the campus environment (Pascarella, 1985; Pascarella & Terenzini, 1991) have proven to be significant factors in promoting a variety of desirable outcomes of higher education for students matriculating at four-year institutions.

Findings from recent investigations into the experiences and outcomes of college for new majority students may also provide hints to what the college experience for community college students may be like. New majority student have been variously defined for the past two decades as commuters who may also be nontraditional age and part-time students (Slade & Jarmul, 1975), nontraditional age commuters who work, nurture families, and attend college part-time (Arnold, Kuh, Vesper, & Schuh, 1991), and first-generation college students (Terenzini, Springer,

Yaeger, Nora & Pascarella, 1995). Whichever definition one chooses, the profile of new majority students reads similarly to the list of personal characteristics and responsibilities community college students bring to their higher education experience (Kinnick & Kempner, 1988; Phillipe, 1995; Rendon, 1995). Focusing on the experience of college for these new majority students may illuminate strategies for studying the process of the community college experience.

Terenzini et al. (1995) painted a dismal picture of first-generation students who had major obstacles blocking their path to higher education. For example, in contrast to a comparison group of traditional students, the first-generation students were less well-prepared academically, had more dependent children, spent fewer hours studying and more hours working, and were less involved with peers and teachers. "Overall," the authors commented, "the portrait is one of students at risk" (Terenzini et al., 1995, p. 12). Studying new majority students from another perspective, Arnold et al. (1991) demonstrated that both institutional environment and student effort were significant predictors of learning gains for both traditional and new majority students at metropolitan universities.

With the exception of persistence studies (Mutter, 1992; Nora, 1987; Whitaker, 1989) research designed to examine the effects of student involvement on outcomes for community college students is still in its infancy. Initial investigations reveal that being fully involved in the learning process in a supportive environment has positive impacts on outcomes other than

persistence. Lehman (1990) aggregated data from responses to the Community College Student Experiences Questionnaire and demonstrated the applicability of the concept of quality of effort to community college students. In a longitudinal study of learning communities at LaGuardia Community College, Tinto and Love (1995) reported that students who attended two or more classes together accumulated more credits, earned higher grade point averages and expressed greater degrees of intention to continue in higher education than students in traditional classes. Further, Cousineau and Landon (1989) concluded that satisfaction with the campus climate and involvement in their educational experiences were significant predictors of self-assessments of gains in academic skills for a sample of students from six community colleges in British Columbia.

The effort students exert in taking advantage of the opportunities and facilities the campus environment offers has been analyzed for university students, mainly campus residents, for two decades. How community college affects students, however, is less well examined. Since the profile of community college students makes it difficult to distinguish them from new majority students at four-year colleges and universities and since the concept of student involvement as measured by quality of effort has been applied to community college students, it seems reasonable to hypothesize that student involvement and campus climate, as well as certain personal characteristics may be significantly related to outcomes for community college

students who intend to transfer to a four-year college or university to complete a degree.

Purpose

Using the findings of Anderson et al. (1991) as a model, this project will employ student characteristics, measures of student involvement, and estimates of satisfaction with the campus environment as predictors of outcomes for community college students who plan to transfer to a four-year college or university to earn a baccalaureate degree. In particular, the purpose is to demonstrate that community college students' assessments of their gains in general education and in personal and social development can be expressed as linear combinations of age, full- or part-time status, effort, and satisfaction with the campus environment.

Method

Instrument

The Community College Student Experiences Questionnaire (CCSEQ), developed by Friedlander, Lehman, and Pace (1990), extends the concept of involvement in the learning process to the unique missions, circumstances, and goals of community colleges. It is a survey instrument designed to gather information about community college students in four areas: amount, breadth, and quality of effort in both in-class and out-of-class experiences; progress toward important educational outcomes; satisfaction with the community college environment; and demographic and background characteristics. At the heart of the instrument is the College Activities section which assesses the quantity and quality of

effort students estimate they expend as they use the facilities and engage in the experiences offered by their institutions. Estimates of Gains items prompt students to rate the progress they believe they have made in a broad range of 23 educational goals. Five items elicit information about how students perceive their community college environment.

Independent Variables

Student characteristics. The two student characteristics included in these analyses are age (coded 1 = 27 years or less, 2 = 28 years or more) and full-time or part-time status (coded 1 = enrolled for 12 or more credits, 2 = enrolled for less than 12 credits). A case assigned a value of "1" for each of these two variables is considered a traditional student, while a case with a value of "2" for both variables is a new majority student according to the typology used by Arnold et al. (1991).

Quality of effort. Student quality of effort is measured by the aggregate of each student's responses to CCSEQ items grouped into seven scales representing quality of student effort in: Course Activities (10 items); Library Activities (7 items); Experiences with Faculty (8 items); Student Acquaintances (6 items); Art, Music, and Theater Activities (6 items); Writing Activities (8 items); and Science Activities (9 items). For items in each scale the student is prompted to account the number of times he or she has engaged in a certain activity during the school year according to the choices coded 1 = never, 2 = occasionally, 3 = often, 4 = very often. For each of the Quality of Effort Scales, items are arranged from those which require the

least amount of effort to those requiring greatest effort. For example, in the Course Activities Scale, students are first asked how often during the current semester they have participated in class discussion. The tenth and last item of this scale requests students to respond with their assessment of how often in the current semester they have considered the accuracy and credibility of information from different sources. The score for a particular scale is formed by summing the points awarded for the response choices for each item. The Library Activities Scale has seven items; scores for that scale then range from 7 for a student who answered "never" to each item to 28 for a student who responded "very often" to each item. A global effort score was obtained for this investigation by summing the students' scores on each of the seven Quality of Effort scales discussed above. A preliminary factor analysis revealed that all the Quality of Effort scales discussed loaded onto a single "academic effort" factor. Scores range from 54 to 216. Machine scoring of the CCSEQ instrument requires that a score for a scale is reported as missing if a response to any one item of the scale is missing.

Campus environment. Perception of the campus environment was assessed by summing scores of responses to five statements about the nature of the campus. Four items prompt students to indicate how many of the students they know are friendly and supportive; how many instructors are approachable, helpful and supportive; how many of their courses are challenging, stimulating, and worthwhile; and how many support personnel they find to be helpful, considerate, and knowledgeable. Responses

are coded 1 = few or none, 2 = some, 3 = most, 4 = all. The fifth question asks students to consider whether their college is a stimulating and often exciting place to be. The response choices include: 1 = all the time, 2 = most of the time, 3 = some of the time, 4 = rarely or never.

Interaction effects. Five additional independent variables were created to account for possible interaction effects of age and full- or part-time status with the effort and environment variables and with each other. These included age with full- or part-time status, age with effort, age with environment, full- or part-time status with environment, and full- or part-time status with effort.

Dependent Variables

Two dependent variables for the analyses are students' self-assessments of their gains personal and social growth and of their gains in general education. Both measures are derived from the 23 statements in the Estimates of Gains section of the CCSEQ. Lehman (1990) completed factor analysis of the gains statements and found a six factor solution.

Gains in personal and social development. Six gains statements prompt students to assess the progress they believe they have made during the current school year in becoming aware of different cultures, clarifying their own values, developing an awareness of their own abilities and interests, developing an ability to learn on their own, understanding other people, and developing good health habits. For each statement, students

assess their perception of their progress as 1 = very little, 2 = some, 3 = quite a bit, 4 = very much.

Gains in general education. Using the same response choices, the measure for Gains in General Education includes students' estimates of their gains in another 13 areas that include arts; communication skills; math, science, and technology; and global issues including language, politics, economics and history.

Subjects

CCSEQ data for students from nine geographically diverse community colleges (N =4210) were selected from a database of CCSEQ administrations from 1990 to the present maintained at the Center for the Study of Higher Education at the University of Memphis. Schools were selected for the large numbers of respondents to the questionnaire in order to avoid responses from special constituencies of the community college populations. For each of the nine schools represented, data were retained for students intending to transfer to a four-year college or university by selecting cases where students responded that their most important reason for attending their current community college was to prepare for transfer to a four-year college or university and that their intent was to transfer to a college or university. The number of respondents in each of the nine community colleges ranged from 355 to 593. Of the 4210 students whose CCSEQ scores were examined for the analyses, 3520 (84%) listed their age as 27 years or less, and 686 (16%) indicated they were 28 or more years old. Of the total, 2543 (60%) were

taking a full load of classes totaling 12 hours or more, and 1663 (40%) carried less than 12 credit hours the semester they completed the CCSEQ.

Data Analyses

Two standard multiple regression analyses, one for gains in personal and social development as the criterion and another for gains in general education, were performed. In each analysis, the predictor variables included student quality of effort, age, full- or part-time status, perception of the campus environment, and the five variables created to account for possible interaction effects.

Results

Of the 4210 respondents to the CCSEQ, 44% were male and 56% female. The majority (58%) of the respondents were caucasian. Ethnicities included hispanic (20%), Asian (15%), and African-American (3%).

How these students spend their time can be studied by assessing the work, study, and family responsibilities the students reported. Since more than half the sample (52%) reported working from ten to 20 hours per week, and another 26% work at least 30 hours a week, it is not surprising that 75% estimated they spent 20 hours or less each week studying and preparing for their classes. Further evidence of multiple demands on time the students faced is revealed in their responses to questions about their responsibilities. Job pressures (57%) and family responsibilities (37%) took at least some time away from school work.

Examination of plots of predicted values of the dependent variable against the residuals for each of the two analyses showed the assumptions of normality, linearity and homoscedasticty appear to be adequately met.

A standard multiple regression was performed between self-assessed gains in personal and social development as the dependent variable and effort, environment, students' age, and students' full- or part-time status as predictors. Table 1 presents means and standard deviations for all the variables under consideration, and Table 2 contains the results of the two regression analyses.

Gains in Personal and Social Development

Table 2 contains the unstandardized regression coefficients (B) and intercept, the standardized regression coefficients (β), the semipartial correlations (sr^2), R and R^2. For this analysis, R for regression was significantly different from zero, $F(9, 3491) = 189.669$, $p < .001$. For the two regression coefficients that differed significantly from zero, 95% confidence limits were calculated. The confidence limits for effort were from 0.0571 to 0.0977, and those for environment were from 0.2016 to 0.5606.

Two variables were reliable predictors of students' assessments of their gains in personal and social development. Quality and quantity of student effort ($\beta = .428$, $sr^2 = .012$) contributed significantly to gains in this area as did a positive perception of the campus environment ($\beta = .240$, $sr^2 = .003$). The combination of the four independent variables and their five interaction terms contributed another .314 in shared variability.

Altogether, 32.9% of the variability in these community college students' self-assessments of their gains in personal and social development was predicted by knowing their scores on the four independent variables with the inclusion of the five interaction terms.

Gains in General Education

When the regression analysis was repeated with the same predictor variables using gains in general education as the criterion, R for regression was significantly different from zero, $F(9,3422) = 305.587$, $p < .001$. Confidence limits for the three regression coefficients that differed significantly from zero were computed at the 95% level. The confidence limits for effort were from 0.1541 to 0.2202, for environment from 0.0324 to 0.6212, and for the interaction of effort and full- or part-time status from 0.0002 to 0.0359. Table 2 contains the unstandardized regression coefficients (B) and intercept, the standardized regression coefficients (β), the semipartial correlations (sr^2), R and R^2.

With gains in general education as the criterion, the scores on all four variables including the five interaction terms predicted 42.4% of the variability in the dependent variable. The three significant predictors in combination, campus environment, quality of effort, and the interaction effect of environment and full- or part-time status, contributed .022 of the total explained variability. As in the previous analysis, quality and quantity of student effort and a positive perception of the campus environment both contributed significantly to

students' assessments of their progress in general education. The significant value for the interaction of campus environment with full- or part-time status (β = .134) suggests a larger contribution of a positive perception of the campus environment to general education gains for part-time students than for the full-time students surveyed.

Discussion

For the students considered in these analyses, both their assessments of the quality and quantity of effort they expend in their pursuit of higher education and their perceptions of the campus as a supportive and challenging learning community are reliable predictors of outcomes. Regardless of their ages, the students who were more involved and those who rated their campus environment positively reported making more progress in personal and social development as well as in general education than less involved students or those who were less satisfied with the campus climate. Enrollment status does appear to interact with campus environment to predict gains in general education, however. Perceiving the campus environment as friendly and helpful makes a larger contribution to gains in general education for part-time students than for their full-time counterparts. What students do in terms of their involvement in their college experience does appear to make a difference in how much they learn. Rendon (1993a) took this conclusion a step further by suggesting that for minority students at least, validation and community experiences are prerequisites, not outcomes, of student development.

Comparison to Previous Research

The results of these analyses are consistent with findings of other researchers about the community college experience. In their analysis of traditional age full-time students and new majority students Arnold et al. (1991) concluded that learning gains are affected by both effort and environment. Cousineau and Landon (1989) noted that for self-reports of skill gains, satisfaction with the community college environment and level of involvement in the educational experience were significant predictors. Studies of factors affecting retention for community college students (Mutter, 1992; Nora, 1987; Whitaker, 1989) have found that academic involvement or integration is the most important predictor. Results of this analysis suggest that academic integration as measured by students' self-assessments of their quality and quantity of effort is also important in insuring that students are successful in meeting the challenges other outcomes present as well.

Questions for Further Study

The combined effects of student characteristics, effort, and campus environment that were employed to predict the outcomes studied here accounted for roughly 40% of the variability in the outcome measures. The values of R^2 for the two regression analyses are similar to those of regression analyses conducted by Arnold et al. (1991) and Cousineau and Landon (1989). No significant individual predictor variable, however, accounted for more than 2% of the variability in the outcome measure under consideration. What other constructs explain outcomes of the

community college experience and might account for variability in outcome measures studied? Perhaps, items that can be assessed using the CCSEQ, such personal characteristics as family responsibilities and amount of time spent working at a job, are significantly related to the outcomes studied here. Or, maybe items not tapped by the instrument such as motivation, goal commitment, and students' doubts about their ability to succeed could help predict these outcomes.

Implications for Policy Makers and Practitioners

The reliable effects of effort and campus environment in predicting both outcomes make a strong case for community college professors to encourage student involvement in all aspects of their classroom activities. Examining items from the CCSEQ Quality of Effort scales can provide faculty members insight into ways they can encourage students to go beyond simply listening to a lecture. For example, providing opportunities for students to apply principles and concepts learned in class to other situations and to compare and contrast the different points of view presented in a course will facilitate students' efforts to go beyond the low level of involvement required for a standard lecture. Administrators and student affairs practitioners at community colleges can use items from the campus environment section of the CCSEQ to develop strategies for creating a supportive and challenging environment for learning and development. Providing training to assist counselors, advisors, and departmental secretaries to provide courteous and

knowledgeable service will help students perceive that their campus is supportive.

At the same time some offer alternatives to transfer rate as an indicator of community college effectiveness, others argue for a revitalization of efforts to prepare students who intend to transfer. The 24% of the community college students who intend to transfer (Astin et al., 1995) to a four-year college or university to earn the baccalaureate should be both challenged and supported to improve and enhance all the skills necessary for a successful transition; the students who are on campus to prepare for an immediate vocation have the same requirements. Viewing the community college mission as either preparation for transfer or a vocation shortchanges someone. Any student can benefit from classroom activities which require high levels of involvement and from a campus environment that is challenging, exciting and stimulating.

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Table 1

Means and Standard Deviations for Variables in Regression

Variable	Mean	S.D.
AGE: 1 = ≤27, 2 = ≥ 28	1.159	.366
UNITS: 1 = full-time, 2 = part-time	1.392	.488
EFFORT: Quality of Effort Scales	112.220	24.142
ENVIRONMENT: Satisfaction Index	13.696	2.758
AGE WITH UNITS (INT1)	1.661	.938
AGE WITH EFFORT (INT2)	130.023	50.323
AGE WITH ENVIRONMENT (INT3)	16.059	6.764
UNITS WITH ENVIRONMENT (INT4)	19.106	7.944
UNITS WITH EFFORT (INT5)	153.672	58.004
GAINS IN PERSONAL/SOCIAL DEVELOPMENT	15.121	4.382
GAINS IN GENERAL EDUCATION	28.321	7.804

Table 2

Regression Analyses for Gains in General Education and Personal Development

	Gains in General Education				Gains in Personal & Social Areas			
	B	SE B	β	sr^2	B	SE B	β	sr^2
INT5	0.018	0.009	0.134*	0.001	0.009	0.006		
ENVIRON	0.327	0.150	0.115*	0.001	0.381	0.092	0.240***	0.003
AGE	-0.544	2.355			-1.730	1.437		
EFFORT	0.187	0.017	0.582***	0.020	0.077	0.010	0.428***	0.012
INT4	-0.050	0.079			-0.061	0.048		
INT1	0.038	0.623			0.696	0.380		
INT2	-0.012	0.012			0.002	0.007		
UNITS	-2.014	1.386			-1.217	0.849		
INT3	0.110	0.109			-0.018	0.067		
R			.668***				.574***	
R^2			.446[a]				.329[b]	
N			3432				3491	

*p < .05, ***p < .001

[a]Unique variability = .022; shared variability = .424
[b]Unique variability = .015; shared variability = .314